

Remarks

In view of the above amendments and the following remarks, reconsideration of the objections and rejections, and further examination are requested.

The specification and abstract have been reviewed and revised to make a number of editorial revisions thereto. A substitute specification and abstract including the revisions have been prepared and are submitted herewith. No new matter has been added. Also submitted herewith are marked-up copies of the specification and abstract indicating the revisions incorporated therein.

Claims 3-18, 22, 28, 31, 33 and 36 have been objected to for including various informalities. The claims have been amended so as to address these informalities. As a result, withdrawal of the objections is respectfully requested.

Further, claims 1-4, 6, 9, 12, 14, 17-25, 28-31, 33-46, 49-54, 56-58 and 64-74 have been amended so as to make a number of editorial revisions thereto.

Additionally, withdrawn claims 75 and 76 have been canceled without prejudice or disclaimer to the subject matter contained therein.

Claims 32-35 have been indicated as containing allowable subject matter. The Applicant would like to thank the Examiner for this indication of allowable subject matter.

Claims 1-5, 7, 8, 18, 23, 24, 26, 27, 29, 30, 31 and 37 have been rejected under 35 U.S.C. §102(b) as being anticipated by Shakuda (US 5,825,052). Claims 6 and 25 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Shakuda.

The above-mentioned rejections are respectfully traversed and submitted to be inapplicable to the claims for the following reasons.

Claim 1 is patentable over Shakuda, since claim 1 recites a p-type semiconductor including, in part, a localized band formation element that is isovalent with at least one other element of the p-type semiconductor and has a smaller electronegativity than an electronegativity of the at least one other element. Shakuda fails to disclose or suggest the localized band formation element as recited in claim 1.

Shakuda discloses a semiconductor light emitting device including gallium nitride type compound semiconductor layers, wherein the layers include at least one N-type layer and at least one P-type layer. Shakuda also discloses that at least one of the layers comprises a compound semiconductor in which part of the nitrogen (N) in the gallium nitride type compound

semiconductor is replaced with phosphorus (P) and/or arsenic (As). (See column 3, line 63 – column 4, line 46 and column 8, line 66 – column 10, line 24 and Figure 1).

Further, Shakuda discloses that the wavelength of light emitted from the semiconductor light emitting device can be made longer using arsenic (As) and phosphorous (P) and that a lattice constant can be changed; and when doping 1% of more of phosphorous (P) and 0.5% or more of arsenic (As), the wavelength of emitted light is shifted to a long wavelength region. (See column 9, lines 43-58).

Based on the above discussion, it is apparent that Shakuda discloses the use of various combinations of nitrogen (N), arsenic (As) and phosphorous (P) to control the wavelength of light emitted from the semiconductor light emitting device. However, Shakuda fails to disclose or suggest a localized band formation element that is isovalent with at least one other element of the p-type semiconductor and has a smaller electronegativity than an electronegativity of the at least one other element, as recited in claim 1. As a result, claim 1 is patentable over Shakuda.

As for withdrawn claims 19-21, it is submitted that these claims should be given due consideration based on their dependence from claim 1, which is allowable for the above-mentioned reasons. Therefore, claims 19-21 are also allowable.

As for withdrawn claims 38-74, it is noted that independent claims 38, 45 and 74 include the features of claim 1. Therefore, claim 1 represents a sub-combination of the combinations set forth in independent claims 38, 45 and 74. As a result, claims 38-74 should be given due consideration and allowed for the same reasons set forth above in support of claim 1.

Because of the above-mentioned distinctions, it is believed clear that claims 1-74 are allowable over Shakuda. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1-74. Therefore, it is submitted that claims 1-74 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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